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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/591,911	01/18/2007	Kenji Shizuka	296009US0PCT	4718
22850	7590	09/16/2010		
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER HAN, KWANG S	
			ART UNIT 1795	PAPER NUMBER
			NOTIFICATION DATE 09/16/2010	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary

Application No.

10/591,911

Applicant(s)

SHIZUKA ET AL.

Examiner

Kwang Han

Art Unit

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/22)
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: ____
- 5) ☒ Notice of Informal Patent Application
- 6) ☐ Other: ____
- Paper No(s)/Mail Date See Continuation Sheet.

Continuation of Attachment(s) 3. Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :12/1/06,10/1/07,12/21/07,12/29/08,8/20/09,2/4/10,6/2/10.

**LAYERED LITHIUM NICKEL MANGANESE COBALT COMPOSITE OXIDE POWDER
FOR MATERIAL OF POSITIVE ELECTRODE OF LITHIUM SECONDARY BATTERY,
PROCESS FOR PRODUCING THE SAME, POSITIVE ELECTRODE OF LITHIUM
SECONDARY BATTERY THEREFROM, AND LITHIUM SECONDARY BATTERY**

Examiner: K. Han SN: 10/591,911 Art Unit: 1795 September 13, 2010

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1 and 2, it is unclear as to whether the value for S which represents the BET specific surface area is regarding the composite oxide or the carbon alone. For the purposes of examination, it will be assumed the BET surface area value is regarding the composite oxide. All claims dependent on claims 1 and 2 are also rejected for the same.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1-4 and 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hosoya et al. (US 2004/0076882) in view of Hampden-Smith et al. (US 2003/0054218).

Regarding claims 1, 2, 4, and 6, Hosoya discloses a powder of a layered lithium-nickel-manganese-cobalt composite oxide for use as a cathode material in a lithium secondary battery [0038] characterized by having a formula defined by $\text{Li}_s\text{Ni}_{1-t-u}\text{Mn}_t\text{M}'_u\text{O}_2$ where M' is any one or more transition metals (e.g. Co) [0048] and s, t, and u satisfy $0.90 \leq s < 1.1$, $0.05 \leq t \leq 0.50$, and $0.01 \leq u \leq 0.30$, respectively [0046-0048] but is silent towards the volume resistivity and the value of the concentration of carbon and BET specific surface area.

Hampden-Smith teaches a secondary battery where the electrode is formed from a lithium based fine powder [0122] where the carbon support constitutes a weight percentage which can vary depending upon the total surface area of the carbon [0133] and the BET surface area of the powder should be as high as possible to increase catalytic activity teaching the carbon weight percentage and BET surface area of the powder to be result effective variables. It would have been obvious to one of ordinary skill in the art at the time of the invention to vary the carbon weight percentage and the BET specific surface area since it has been held that discovering the optimum ranges for a result effective variable such as weight percentage and BET specific surface area involves only routine skill in the art in the absence of showing of criticality in the claimed range (MPEP 2144.05) In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Further, regarding the limitations toward the volume resistivity in a state of being compacted at a pressure of 40MPa, it has been held by the courts that if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. In re Spada, 911 F.2d. 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). See MPEP 2112.01.

Regarding claim 3, Hosoya discloses a value of y/x which is between 0.95 and 2.5 (e.g. when $t=0.4$ and $u=0.2$).

Regarding claim 7, it is noted that this claim is a product-by-process claim. "Even though product-by-process are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-

process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F. 2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). The powder structure of Hosoya is similar to that of the Applicant's, Applicant's process for producing the powder is not given patentable weight in the claims.

Regarding claims 8 and 9, Hosoya discloses a positive electrode for a lithium secondary battery comprising a current collector having thereon a positive electrode active material layer, a non-aqueous electrolyte containing a lithium salt and a positive electrode capable of intercalating/deintercalating lithium [0014, 0020, 0064].

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hosoya et al. and Hampden-Smith et al. as applied to claim 1 to 4 above, and further in view of Shizuka (US 2005/0158546).

The teachings of Hosoya and Hampden-Smith as discussed above are herein incorporated.

Regarding claim 5, Hosoya discloses mean particle size of the composite oxide to be 2 microns or more [0051] but is silent towards the bulk density and median diameter of the composite oxide particles.

Shizuka teaches a layered lithium nickel based compound oxide has properties including a median diameter from 9-20 microns and a bulk density of at least 2.0g/cc because it is capable of providing a lithium secondary cell having a high capacity and excellent rate characteristics [Abstract]. It would have been obvious to one of ordinary

skill in the art at the time of the invention for the composite oxide of Hosoya and Hampden-Smith to have properties including a median diameter from 9-20 microns and a bulk density of at least 2.0g/cc because it is capable of providing a lithium secondary cell having a high capacity and excellent rate characteristics.

Contact/Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kwang Han whose telephone number is (571) 270-5264. The examiner can normally be reached on Monday through Friday 8:00am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dah-Wei Yuan can be reached on (571) 272-1295. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/K. H./
Examiner, Art Unit 1795

/Dah-Wei D. Yuan/
Supervisory Patent Examiner, Art Unit 1795